

ABSTRACT OF THE DISCLOSURE

One embodiment of the present invention concerns an integrated circuit that includes bond pads and special contact pads or points. The bond pads are for interfacing the integrated circuit as a whole with an external circuit, and are to be bonded to a package or circuit board. The bond pads are disposed on the die in a predetermined alignment such as a peripheral, grid, or lead-on-center alignment. The special contact pads are used to provide external test patterns to internal circuits and/or to externally monitor results from testing the internal circuits. The special contact pads may be advantageously located on the integrated circuit with a high degree of positional freedom. For one embodiment, the special contact pads may be disposed on the die at a location that is not in the same alignment as the bond pads. The special contact pads may be smaller than the bond pads so as not to increase the die size due to the special contact pads. The special contact points may also be used to externally program internal circuits (e.g., nonvolatile circuits) at the die or package level. The special contact points may also be used to select redundant circuits for faulty circuits.